

EDITORIALS

A Step in the Right Direction

RECENTLY the chairman of the House of Representatives Ways and Means Subcommittee on Health challenged major health care organizations to develop a voluntary hospital cost containment program. The challenge has been accepted. A national steering committee of "hospital people, doctors, insurers and others with a major stake in hospital cost containment" is being formed under the auspices of the American Medical Association, the American Hospital Association and the Federation of American Hospitals. This is surely a step in the right direction, and one probably long overdue.

For some time it has been a conviction of this writer that complex social problems in our increasingly technologic and interdependent society will never be solved simply by acts of Congress or by imposing regulations more or less based on such acts upon sensitive, everchanging and always interdependent social systems. The health care enterprise in this nation is such a social system and for more than a decade there have been acts of Congress and regulations from the executive branch that have sought to govern it. But this approach has not worked. Health and health care have not improved in proportion to the dollars spent, and in fact the dollars themselves have now become an overriding problem. It seems that legislative and regulatory mechanisms, which tend to seek consistency and more or less standardized solutions to things, are ill-adapted to deal swiftly enough, flexibly enough or sensitively enough to meet everchanging needs which are so different in individual and local situations. But some form of governance is clearly needed. Any sensitive, complex, interdependent system—whether mechanical, physical, biological or human—needs some kind of governance if it is to work smoothly. And it is noteworthy that complicated systems usually have some kind of internal governance, such as an automatic pilot in a large airplane for one example, or the homeostatic mechanisms in the internal environment of biological systems for another. Each of these co-

ordinates a number of forces or sources of power within the system to meet changing situations.

It is a characteristic of this nation that power is divided or shared. In our government there are the executive, legislative and judicial branches, and there are each of these at the federal, state and local levels. This adds up to nine foci of government. But in our complex social systems, of which the health care enterprise is a prime example, there is yet another kind of division or sharing of power. Here there are at least three easily identifiable major sources of power. There is the government with its various branches at the various levels, there are the health system professionals of many kinds, and there are the "consumers" or public. It would seem that the reality of this division of real power in social systems and particularly in the health care system has not yet been fully recognized. Yet there is growing evidence that no one of these groups or bodies is capable of governing the health care enterprise independently of the full participation and cooperation of the others. At present the federal government's effort to regulate every aspect of health care seems fully underway, but it itself is divided—one approach being pitted against another in a fashion which would be ludicrous if it were not so serious—and clearly no one can point with pride at what has been accomplished after more than a decade of all this effort. The health professionals have never really tried to govern the system, perhaps realizing that they never would be able to do so, but at the same time still not realizing that it could never be managed at all without their full participation. And now there is a full-scale attempt to see whether consumers, that is, persons who by definition are supposed not to know anything about the subject, can somehow do better if given an opportunity to exercise consumer power. It seems safe enough to predict that this will not work either, but the power of consumers, that is, the public, is real and certainly an integral part of the complex social system that is the health care enterprise.

One can hope that we are on the verge of a little better understanding of what should be done. In a sense the government has admitted that it is in trouble with its efforts to contain the costs of health care and is calling upon the professionals for help. This is a step in the right direction and it is right that the professional organizations should respond. But if what has been said is true one may foresee that this step will not be enough. It will be necessary to go farther. The power in the health care system is clearly shared among the government, the professionals (defined as those who must run the system) and the consumers or public, whose system after all it is and whom it serves. It is becoming quite safe to say that no one of these groups will ever be able to govern the health care enterprise alone. Ways will have to be found for genuine collaboration among them, which will amount to some kind of internal governance, much as is required for any complex system whether it be physical, mechanical, biological, human or even a combination of most or all of these.

—MSMW

Cholesterol Metabolism and Human Disease

SCOTT GRUNDY'S REVIEW of cholesterol metabolism in man, which appears in this issue, should be useful to all who are interested in the role of cholesterol in atherogenesis and gallstone formation. Cholesterol accumulates locally in both disorders, and full understanding of the mechanisms involved will be required if rational measures for long-term prevention or therapy are to be designed. A necessary first step toward such an understanding would be to trace the pathways by which cholesterol is synthesized, absorbed, transported and excreted. This Dr. Grundy has succinctly done. A second step, particularly in the case of atherogenesis, would be to describe at a molecular level the normal and pathologic effects of cholesterol on cells and tissues. Unfortunately, knowledge concerning these effects is still sparse, although potentially important information has recently been acquired.

Perhaps the most widely appreciated physiologic role of cholesterol is to serve as a precursor of bile steroids and steroid hormones. However,

most of the cholesterol in the body does not serve this purpose, but is a component of cell membranes. One role of cholesterol in these membranes is apparently to modulate membrane fluidity and stability.¹ For example, *in vitro* studies of erythrocytes² have clearly indicated that selective removal of cholesterol can lead to increased osmotic fragility. A second role of cholesterol in membranes is apparently to influence membrane permeability. Changing the content of cholesterol in artificial vesicles or natural membranes can alter permeability to water soluble solutes.¹ A third role of cholesterol in membranes may be to influence the activity of certain membrane enzymes not necessarily related to cholesterol metabolism. Evidence for this has been obtained both for enzymes of the outer cell membrane³ and for enzymes of the membranes of cell organelles.⁴ In addition, there are indications that membrane cholesterol content can affect such complex cellular processes as endocytosis.⁵ How the content of cholesterol itself in membranes is regulated to integrate these various effects is not fully understood, nor is it known which membrane functions would be most seriously disturbed were the mechanisms that regulate cholesterol content to fail.

To understand how dysregulation of cholesterol metabolism in arteries might contribute to atherogenesis poses an even greater challenge. Whereas essential agreement exists concerning some aspects of atherosclerosis, knowledge of its molecular pathology is fragmentary at best. Most investigators would accept a characterization of atherosclerosis⁶ that emphasizes the focal accumulation of smooth muscle cells in the arterial intima accompanied by extracellular matrix components, and intracellular and extracellular cholesterol. There also is compelling evidence⁷ that coronary heart disease, and presumably deposition of cholesterol in affected arteries, generally reflects the concentration of certain lipoproteins in the plasma. However, from this point on, the picture is obscured by controversy and by lack of detailed information. To account for the accumulation of smooth muscle cells, the following hypotheses have been advanced: (1) atheroma are benign neoplasms where control of smooth muscle cell proliferation has been lost by cell transformation; (2) cells that normally secrete putative inhibitors of smooth muscle cell proliferation diminish as an effect of aging; (3) proliferation of smooth muscle cells occurs in response to a primary injury to the arterial en-